(U.S. EPA 1979; APHA 1985). Nitrogen fractions analyzed were nitrate (NO_3-N), ammonia (NH_4-N), particulate nitrogen, and dissolved Kjeldahl nitrogen. The phosphorus fractions analyzed were particulate (PP), total dissolved (TDP), and orthophosphate (PO_4-P). All N and P analyses were performed in the ECU Biology Department Central Environmental Laboratory. Total and dissolved organic carbon analyses involved converting the organic carbon to CO_2 by wet combustion (persulfate), followed by analysis of the CO_2 in an infrared analyzer (Oceanography International Model 524C). The procedure is modified slightly from those described in APHA (1985) and U.S. EPA (1979). All the particulate and dissolved N, P, and C fractions were separated by filtration through Whatman 934-AH filters.

John T. Bray supervised the metals analyses in his laboratory at the East Carolina University School of Medicine. The procedures followed closely EPA Method 200.7 (Inductively Coupled Plasma-Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes) using a simultaneous reading spectrometer. The principal difference between the procedure for aqueous samples followed in Bray's laboratory and Method 200.7 is that the analytical wavelengths available on Bray's instrument for several of the elements were different from Method 200.7. However, interelement interference and corrections on these lines have been determined in the same manner as described in Method 200.7. Both unfiltered and filtered samples were analyzed, but concentrations in the filtered samples were often below the limits of detection, indicating that most of the metals are associated with particles. Therefore, only values for the unfiltered samples, representing total metals concentrations, are included in this report.

B. Kane of the East Carolina University School of Allied Health trained project personnel to make biological oxygen demand (BOD_5) analyses using the technique described in APHA (1985) Method 507. Nitrification inhibitor was not added to the samples, which were incubated for five days at 20°C. Initial and final dissolved oxygen values were determined by the Winkler method. Kane's laboratory was also the location for fecal coliform bacteria determinations, made using the multiple tube, MPN procedure with A-1 medium, as described in APHA (1985) Method 908C. Varying concentrations of suspended solids and interfering substances expected in stormwaters affect results of this method less than they affect those from the popular membrane filter techniques. The multiple tube technique is also less subject to interfering bacterial growths or problems in estimation of confluent colony counts. This is especially important in analysis of temporal phenomena where repeat sampling is not possible. All recommended quality checks were followed.

The U.S. Geological Survey study provided inflow and outflow information for the detention pond. Under the direction of Jared D. Bales of the USGS, the City of Greenville constructed just downstream from the detention pond a small concrete-dammed pool fitted with a V-notch weir. A water level recorder was placed in the weir pool and another was located in the detention pond near the outlet. Using 2-min